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Research Document 2000/103 | **Document de recherche 2000/103**

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Results of the 1999 Fish Harvesters' Committees questionnaire And A comparison of Sentinel and commercial catch rates for NAFO Divisions 2J3KL

H. Jarvis, R. Stead[1]

Fish, Food and Allied Workers Union
P.O. Box 10, Station C, St. John's, NF A1C 5H5
And
[1]Science Branch DFO Newfoundland Region,
P.O. Box 5667, St. John's NF A1C 5X1

[1] This series documents the scientific basis for the evaluation of fisheries resources in Canada. As such, it addresses the issues of the day in the time frames required and the documents it contains are not intended as definitive statements on the subjects addressed but rather as progress reports on ongoing investigations.

[1] La présente série documente les bases scientifiques des évaluations des ressources halieutiques du Canada. Elle traite des problèmes courants selon les échéanciers dictés. Les documents qu'elle contient ne doivent pas être considérés comme des énoncés définitifs sur les sujets traités, mais plutôt comme des rapports d'étape sur les études en cours.

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ISSN 1480-4883
Ottawa, 2000

Canada

Abstract

Sentinel survey participants are commercial fish harvesters who have received training in the collection of biological and oceanographic data. These data have become widely used in cod stock assessments. In 1997 the Fish Food and Allied Workers Union, the project sponsor, and DFO Science developed a questionnaire that was circulated to Professional Fish Harvesters' committees in those communities where sentinel activity takes place. As a method of peer review, these committees were asked to compare sentinel results with their observations from various commercial fisheries and to provide suggestions and recommendations on sentinel processes. In general, their comments agree with the trends seen in sentinel catch rates.

Résumé

Les participants aux relevés par pêche sentinelle sont des pêcheurs commerciaux qui ont reçu une formation en collecte de données biologiques et océanographiques. Ces données sont maintenant utilisées communément dans les évaluations des stocks de morue. En 1997, la Fish Food and Allied Workers Union, parrain du projet, et le secteur des sciences du MPO ont préparé un questionnaire qui a été distribué aux comités des pêcheurs professionnels mis sur pied dans les collectivités où des pêches sentinelles sont poursuivies. À titre d'examen par des pairs, on a demandé à ces comités de comparer les résultats des pêches sentinelles à leurs observations sur diverses pêches commerciales et de formuler des suggestions et des recommandations sur les processus de pêches sentinelles. En général, leurs commentaires concordent aux tendances observées des taux de capture des pêches sentinelles.

Introduction

One of the stated objectives of the Sentinel program is to incorporate the knowledge of inshore fishers in the resource assessment process. In addition to collecting catch and effort, migration and biological data, Sentinel was developed to provide an opportunity for commercial fish harvesters to provide specific details and observations about cod for assessment purposes.

To this end, in 1995 and 1996 public meetings were conducted. The Sentinel data was presented and those fish harvesters who attended were asked to provide an interpretation of the results and any additional observations or comments. However, only a small number of meetings could be conducted and attendance at those meetings in 1996 was very low.

To collect information from more fish harvesters and from a much wider geographic area, in 1997 a questionnaire was developed and sent to the fish harvester committee at each Sentinel site. Its purpose was to compare Sentinel results with fish harvesters' observations on cod while conducting various fisheries (lump, black back, capelin, etc.). The 1998 and 1999 questionnaires focused on observations made by fish harvesters while prosecuting the index / commercial cod fishery.

Each year following the conclusion of the Sentinel Survey, the questionnaire and Sentinel catch rate data is sent to each Sentinel enterprise owner. All Sentinel data is made available to the committee and Sentinel / DFO personnel are available to attend the meetings when requested. The Sentinel enterprise owner contacts the fish harvester committee that represents the area where the Sentinel site is located, meetings are held and the completed questionnaire is returned.

Since the Sentinel program began in 1995, fish harvesters, through their local committees, have been providing planning and interpretative assistance. Their assistance and input is one reason the program is providing valuable information about the status of cod in the inshore. The authors wish to acknowledge efforts of the 250 fish harvester committee members who volunteer their time each year to provide us with valuable help and advice.

See Appendix "A" for a copy of the 1999 questionnaire.

1999 Committee Survey Results

Sentinel catch rate trend – Each year most fish harvester committees have stated that the trend seen in Sentinel results and the observations of area fish harvesters were showing the same picture. During 1999, 90 % percent of fish

harvester committees reported that the trend in Sentinel catch rates was the same as the trend in cod abundance as observed by fish harvesters.

A summary of the observations of fish harvesters, as reported by the fish harvester committee at Sentinel sites is as follows.

Figure 1 – 1999 Commercial catch rates – Comments from 2J and Northern 3K were negative. Southern 3K and 3L comments were generally positive.

Figure 2 – 1999 vs 1998 Commercial catch rates – While those in the north categorized 1999 catch rates as being low they indicated catch rates had improved from 1998 to 1999. Overall in 2J3KL, most committees felt catch rates were the same or better than 1998.

Figure 3 – Sounder recordings – Overall in 2J3KL, most committees felt sounder recordings indicated the abundance of cod was the same or better than 1998.

Figure 4 – Bait fish – Committees, overall, felt the amount of bait fish present during 1999 was the same as or better than in 1998.

Figure 5 – Recruitment – Except for 2J, the majority of committees felt that the abundance of small cod had increased from 1998.

Figure 6 – Cod condition – Committee comments indicate cod are in good condition.

Committees were asked for their opinion of the percentage of recaptured tags that are sent to Science. While it has not been addressed in this paper, the information provided by the committees has been made available to Gadoids Section and may prove to be useful in assessing tag return rates.

In addition to collecting observation information the questionnaire provided an opportunity for committees to record general comments and recommendations. While those comments and recommendations have not been summarized here, copies of the completed questionnaire forms are available upon request.

1999 Sentinel vs Commercial Catch Rates

Figures 7 and **8** compare Sentinel and commercial gill net catch rates of Sentinel enterprise owners who fished commercially and conducted Sentinel survey activities on the same fishing grounds. When they fished commercially, Sentinel enterprise owners completed log sheets similar to those completed for Sentinel activities. They also set gear at, or as near as possible to, the Sentinel control set.

This comparison combines catch data from Sentinel control and experimental sets.

The 1995 to 1999 observed trend of increasing Sentinel catch rates from north to south is reflected in the 1999 commercial catch rates of Sentinel enterprise owners.

Figure 7 shows a site by site comparison of the 1999 Sentinel and commercial catch rate.

Figure 8 shows the average 1999 Sentinel and commercial catch rate by NAFO Division.

1999 Commercial Catch Rates

Black Tickle
Pennys Hr.
Tub Hr.
Triangle
Williams Hr.
Murray's Hr.
Spear Hr.
St. Lunaire
Great Brehat
Goose Cove
Conche
Englee
Hr. Deep
Jacksons Arm
Coachmans Cove
Mings Bight
La Scie
Shoe Cove
Smiths Hr.
Jacksons Cove
Miles Cove
Summerford
Durrell
Too Good Arm
Aspen Cove
Lumsden
Wesleyville
Centreville
Happy Adventure
Plate Cove West
Bonavista
Little Catalina
Petley
Thornlea
Hearts Content
Baccalieu Tickle
Northern Bay
Carbonear
Port De Grave
Foxtrap
Pouch Cove
Petty Hr.
Bay Bulls
Calvert
Ferryland
Aquaforte
Renews
Trepassey
Riverhead
Admirals Beach
Point Lance

52 out of a possible 53 committees responded to the questionnaire for a 98% response rate. 51 definitive responses to this question were received.

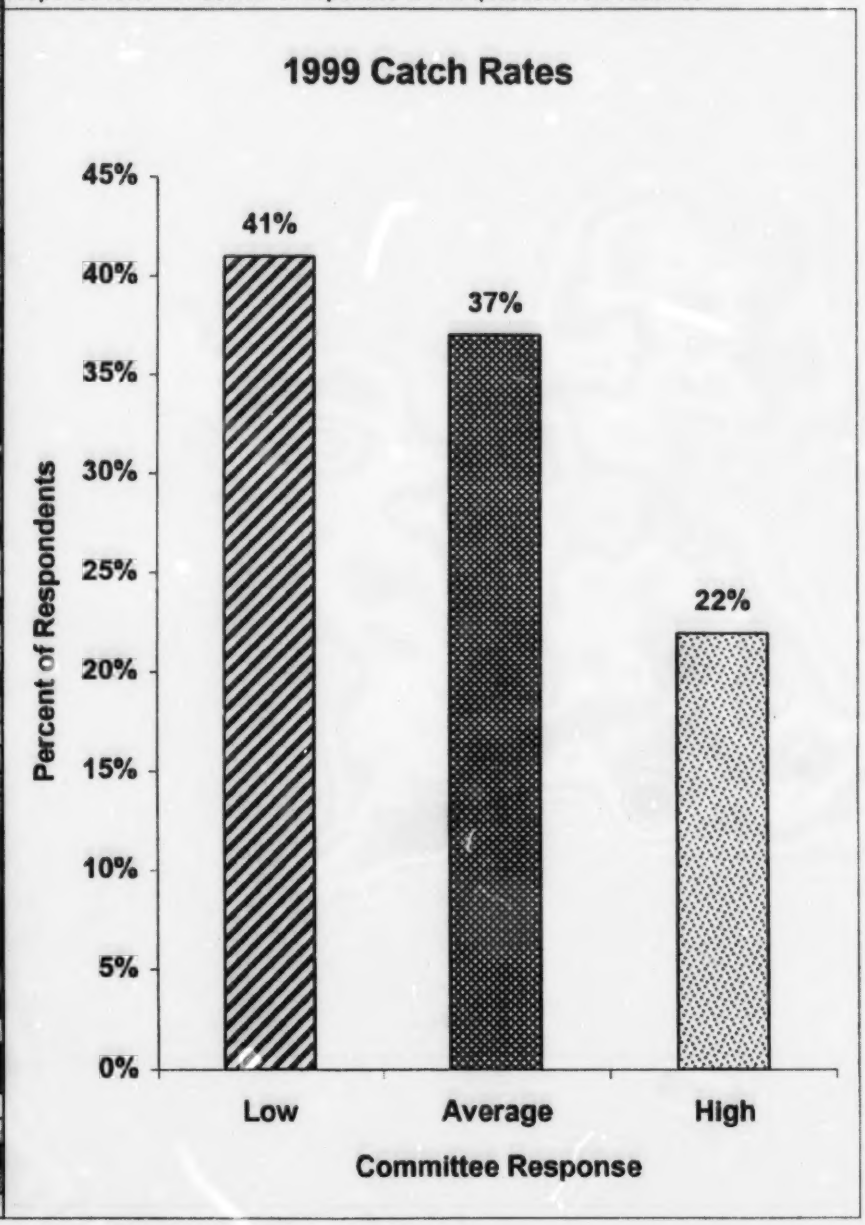

Figure 1

1999 Vs 1998 Commercial Catch Rates

Black Tickle
Pennys Hr.
Tub Hr.
Triangle
Williams Hr.
Murray's Hr.
Spear Hr.
St. Lunaire
Great Brehat
Goose Cove
Conche
Englee
Hr. Deep
Jacksons Arm
Coachmans Cove
Mings Bight
La Scie
Shoe Cove
Smiths Hr.
Jacksons Cove
Miles Cove
Summerford
Durrell
Too Good Arm
Aspen Cove
Lumsden
Wesleyville
Centreville
Plate Cove West
Bonavista
Little Catalina
Petley
Thornlea
Hearts Content
Baccalieu Tickle
Northern Bay
Carbonear
Port De Grave
Foxtrap
Pouch Cove
Petty Hr.
Bay Bulls
Calvert
Ferryland
Renews
Trepassey
Riverhead
Admirals Beach
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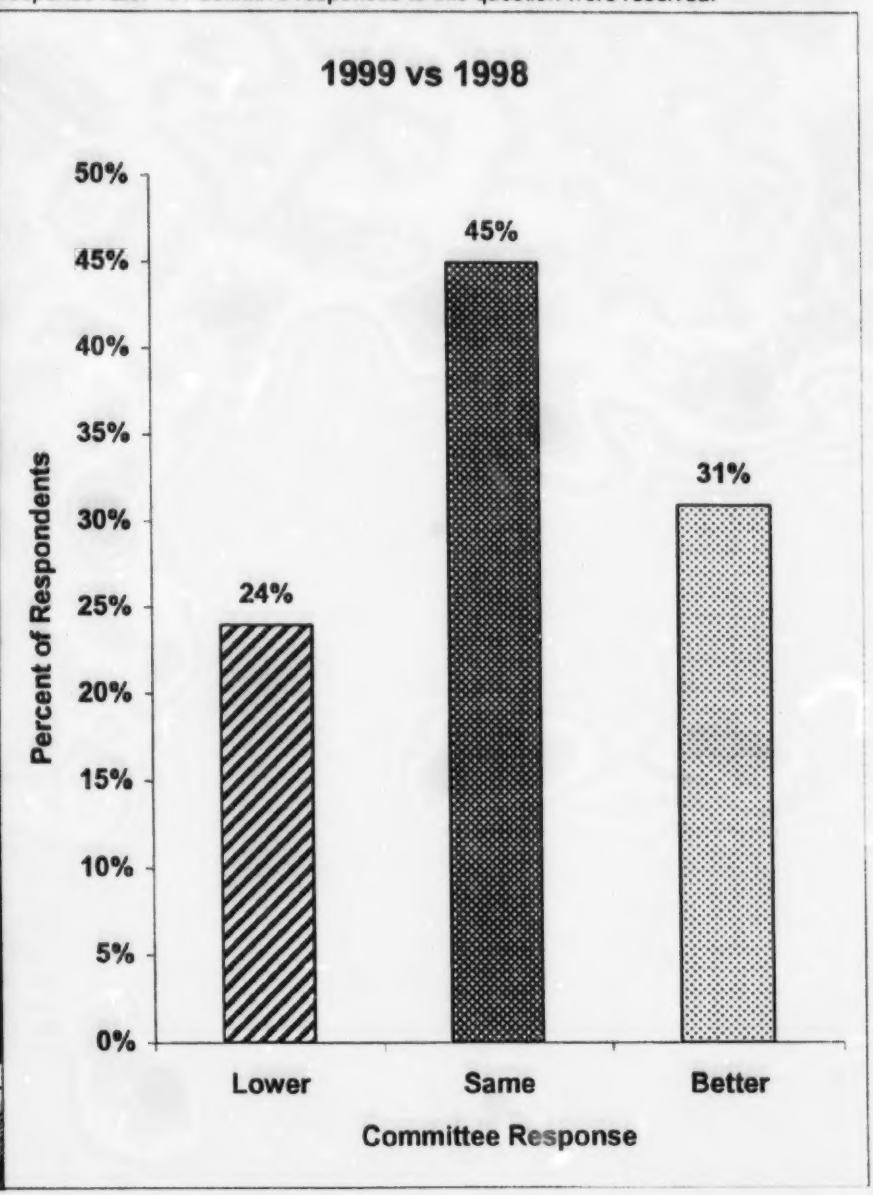

Figure 2

Sounder Recordings

1999 Vs 1998

Pennys Hr.
Tub Hr.
Triangle
Williams Hr.
Murray's Hr.
Spear Hr.
St. Lunaire
Great Brehat
Goose Cove
Conche
Englee
Hr. Deep
Jacksons Arm
Coachmans Cove
Mings Bight
La Scie
Shoe Cove
Smiths Hr.
Jacksons Cove
Miles Cove
Summerford
Durrell
Too Good Arm
Aspen Cove
Lumsden
Wesleyville
Centreville
Happy Adventure
Plate Cove West
Bonavista
Little Catalina
Petley
Thornlea
Hearts Content
Baccalieu Tickle
Northern Bay
Carbonear
Port De Grave
Foxtrap
Pouch Cove
Petty Hr.
Bay Bulls
Calvert
Ferryland
Aquaforte
Renews
Trepassey
Riverhead
Point Lance

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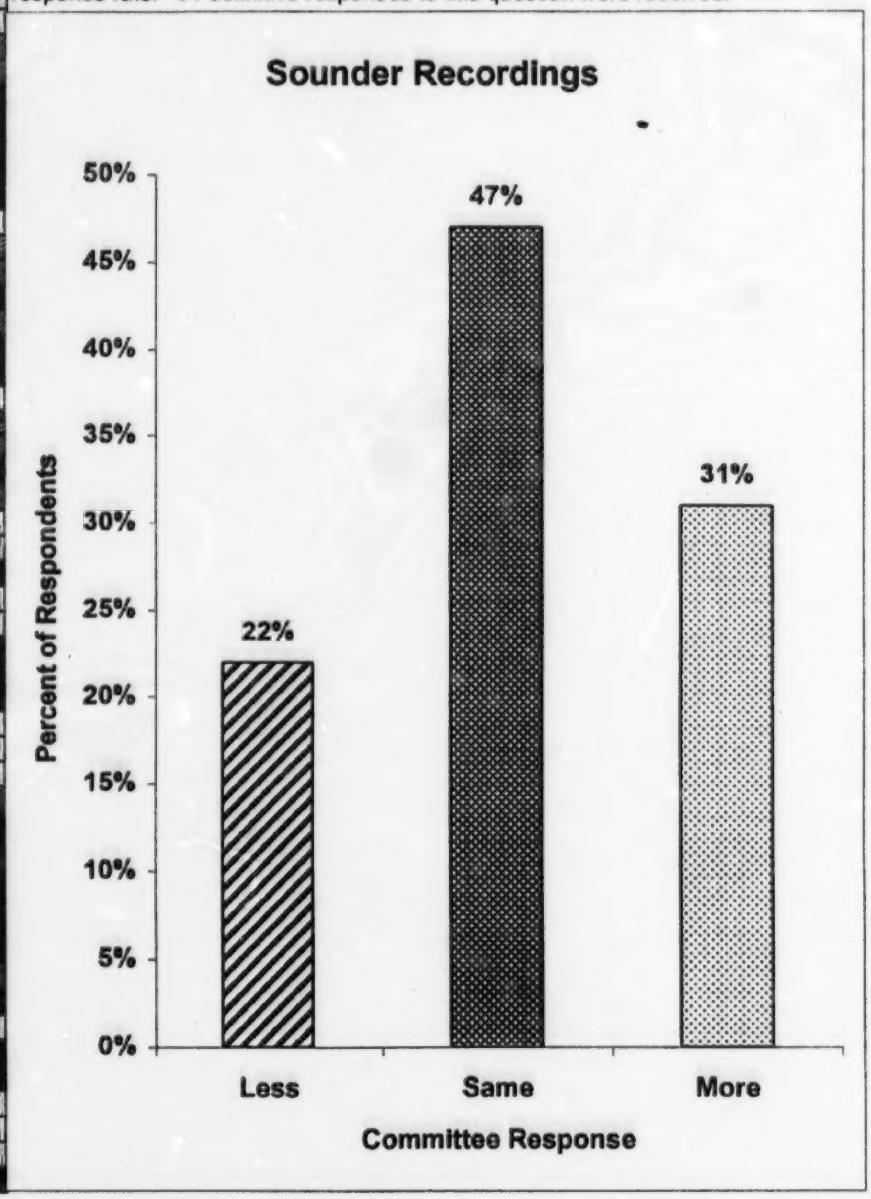

Figure 3

Bait fish

1999 Vs 1998

52 out of a possible 53 committees responded to the questionnaire for a 98% response rate. 51 definitive responses to this question were received.

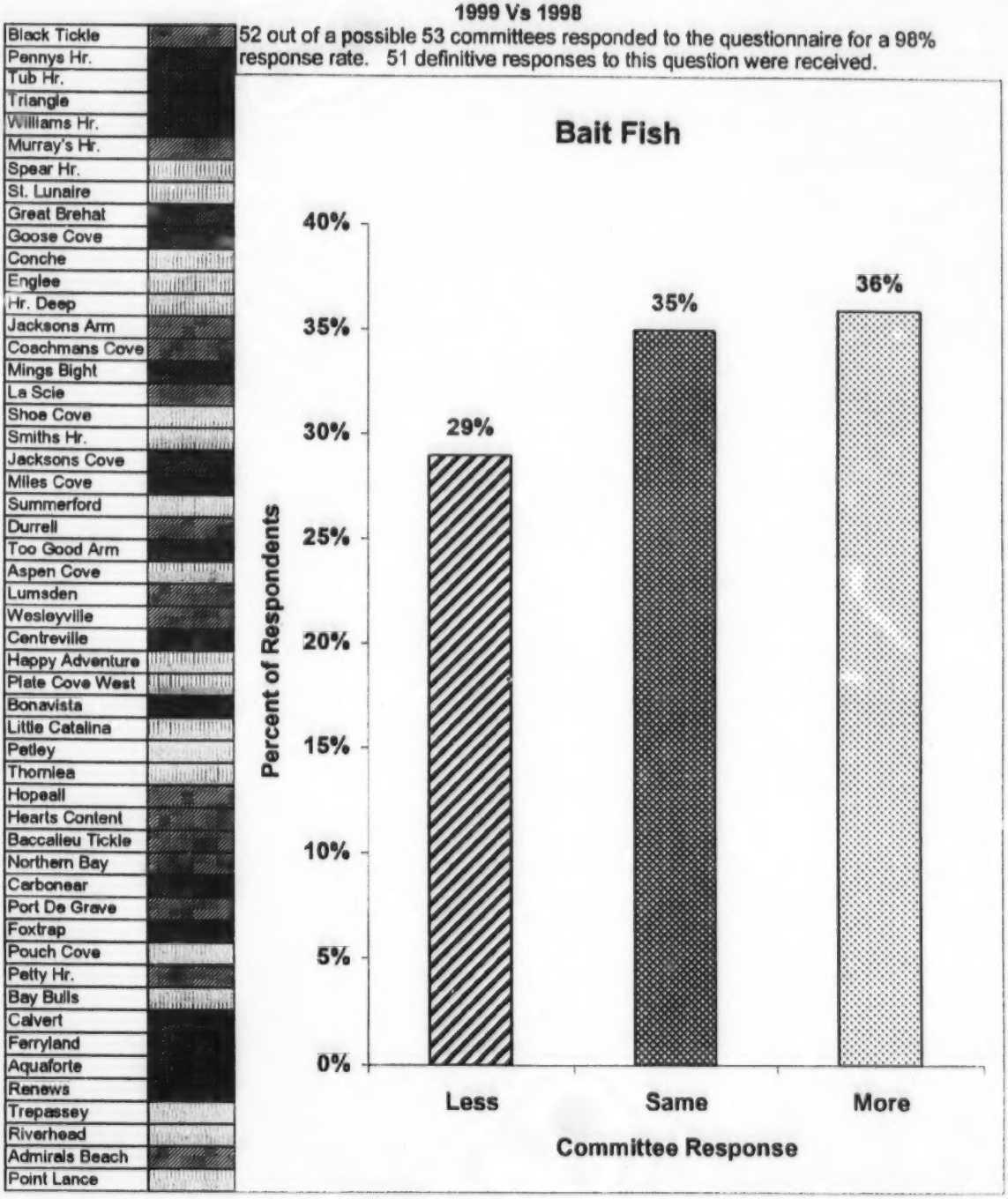

Figure 4

Recruitment

1999 Vs 1998

52 out of a possible 53 committees responded to the questionnaire for a 98% response rate. 51 definitive responses to this question were received.

- Black Tickle
- Pennys Hr.
- Tub Hr.
- Triangle
- Williams Hr.
- Murray's Hr.
- Spear Hr.
- St. Lunaire
- Great Brehat
- Goose Cove
- Conche
- Englee
- Hr. Deep
- Jacksons Arm
- Coachmans Cove
- Mings Bight
- La Scie
- Shoe Cove
- Smiths Hr.
- Jacksons Cove
- Summerford
- Durrell
- Too Good Arm
- Aspen Cove
- Lumsden
- Wesleyville
- Centreville
- Happy Adventure
- Plate Cove West
- Bonavista
- Little Catalina
- Petley
- Thornlea
- Hopeall
- Hearts Content
- Baccalieu Tickle
- Northern Bay
- Carbonear
- Foxtrap
- Pouch Cove
- Petty Hr.
- Bay Bulls
- Calvert
- Ferryland
- Aquaforte
- Renews
- Trepassey
- Riverhead
- Admirals Beach
- Point Lance

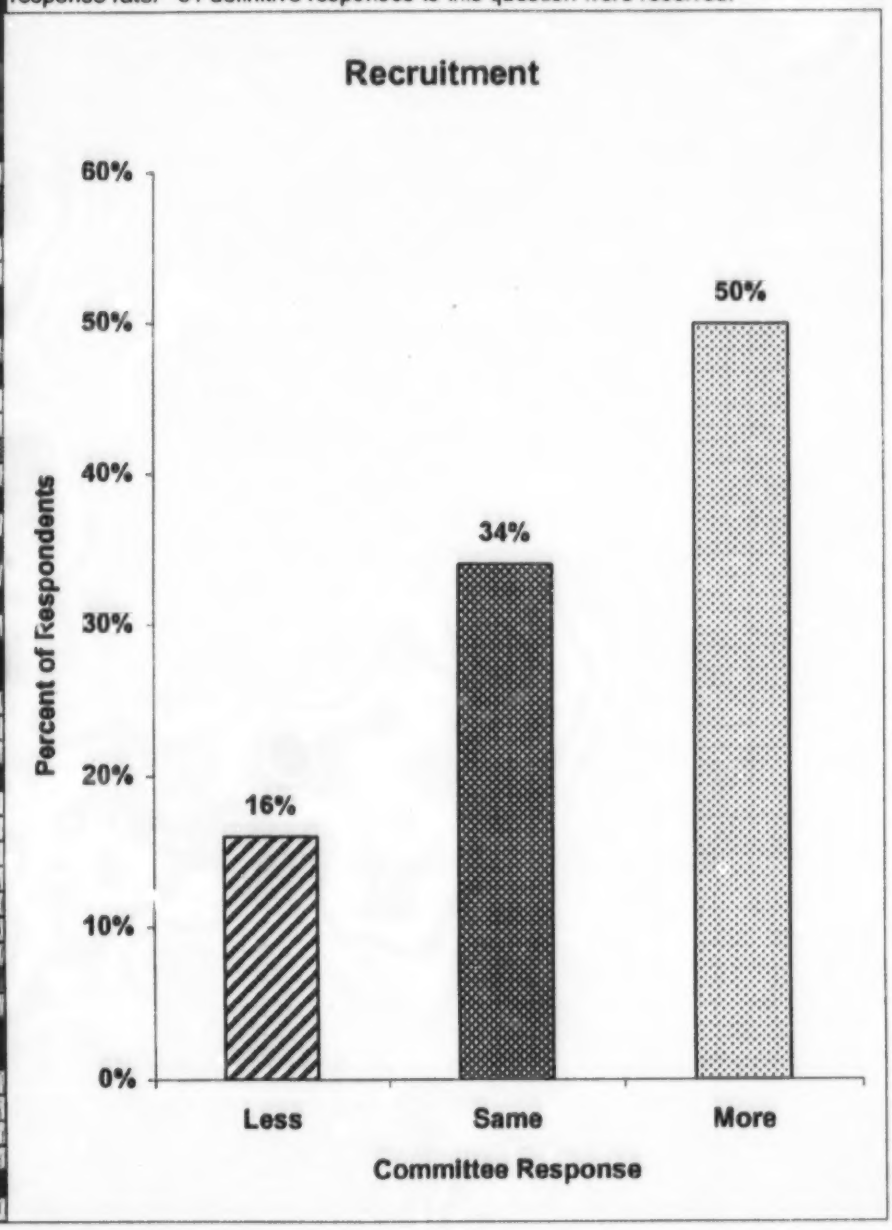

Figure 5

Condition

Black Tickle
Pennys Hr.
Tub Hr.
Triangle
Williams Hr.
Murray's Hr.
Spear Hr.
St. Lunaire
Great Brehat
Goose Cove
Conche
Englee
Hr. Deep
Jacksons Arm
Coachmans Cove
Mings Bight
La Scie
Shoe Cove
Smiths Hr.
Jacksons Cove
Miles Cove
Summerford
Durrell
Too Good Arm
Aspen Cove
Lumsden
Wesleyville
Centreville
Happy Adventure
Plate Cove West
Bonavista
Little Catalina
Petley
Thornlea
Hopeall
Hearts Content
Baccalieu Tickle
Northern Bay
Carbonear
Port De Grave
Foxtrap
Pouch Cove
Petty Hr.
Bay Bulls
Calvert
Ferryland
Aquaforte
Renews
Trepassey
Riverhead
Admirals Beach
Point Lance

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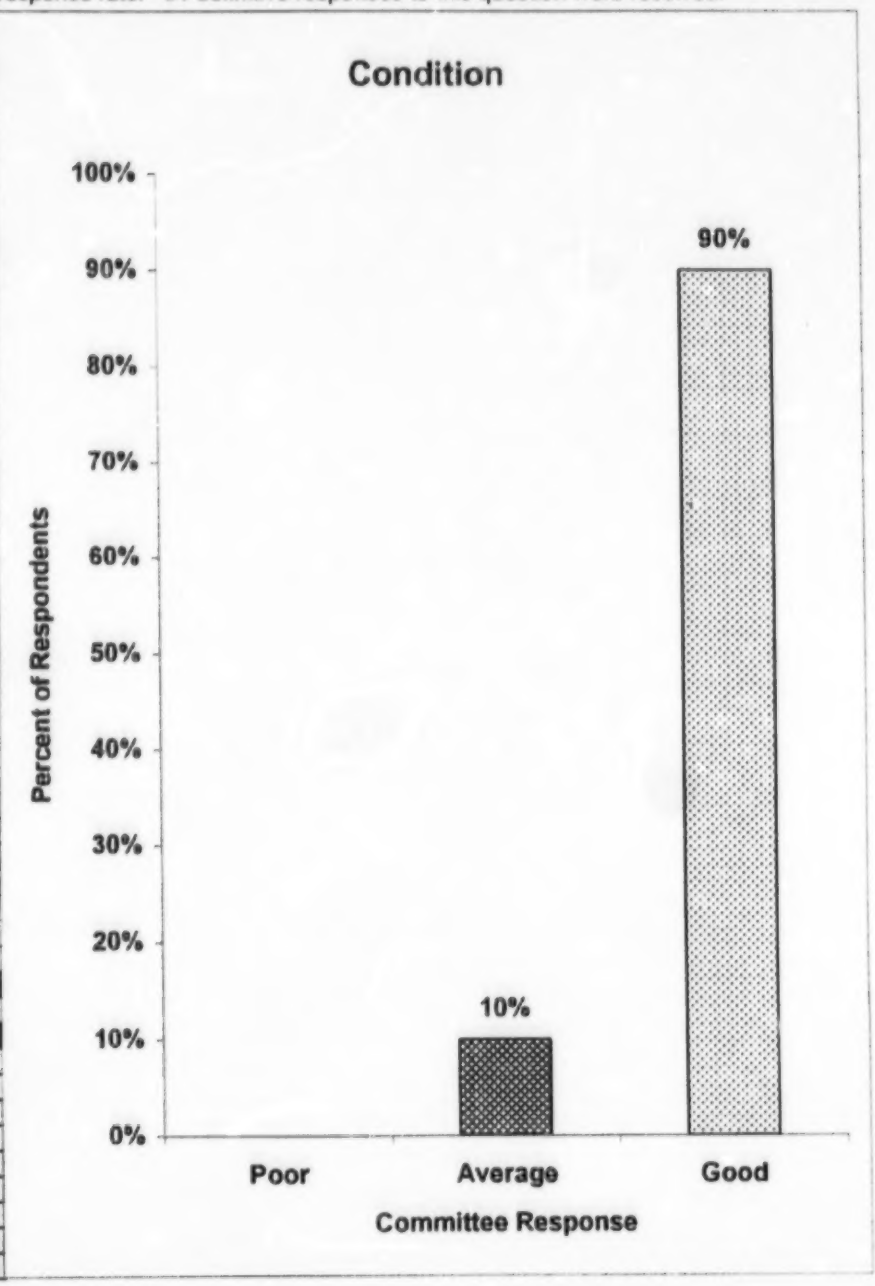

Figure 6

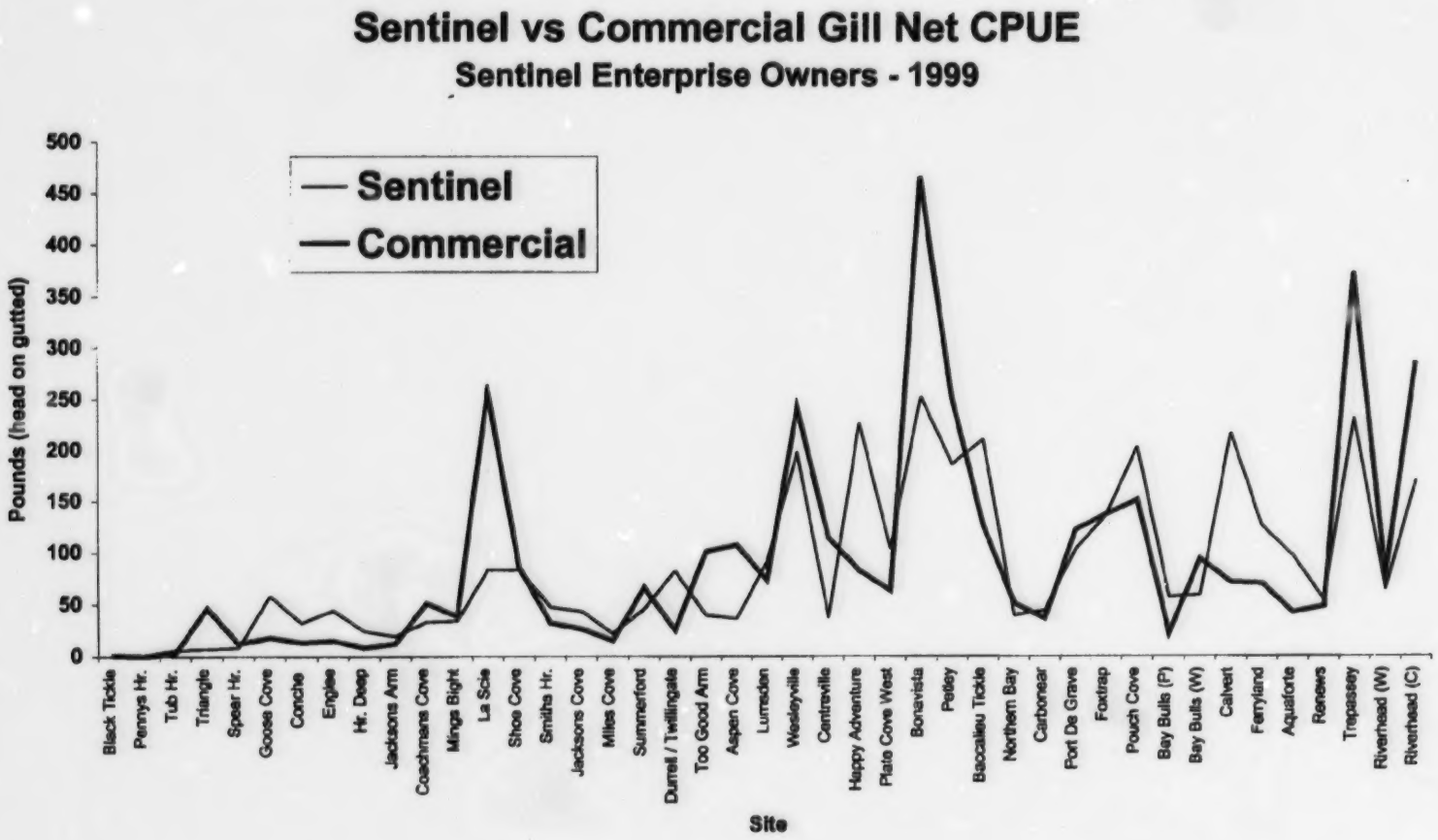
Sentinel vs Commercial Gill Net CPUE
Sentinel Enterprise Owners - 1999
Sentinel
Commercial
Pounds (head on gutted)
500
450
400
350
300
250
200
150
100
50
0
Black Tickle
Pennys Hr.
Tub Hr.
Triangle
Spear Hr.
Goose Cove
Conche
Englee
Hr. Deep
Jacksons Arm
Coachmans Cove
Mings Bight
La Scie
Shoe Cove
Smiths Hr.
Jacksons Cove
Miles Cove
Summerford
Durrell / Twillingate
Too Good Arm
Aspen Cove
Lumsden
Wesleyville
Centreville
Happy Adventure
Plate Cove West
Bonavista
Petley
Bacalieu Tickle
Northern Bay
Carbonear
Port De Grave
Foxtrap
Pouch Cove
Bay Bulls (P)
Bay Bulls (W)
Calvert
Ferryland
Aquaforte
Renews
Trepassey
Riverhead (W)
Riverhead (C)
Site

Figure 7

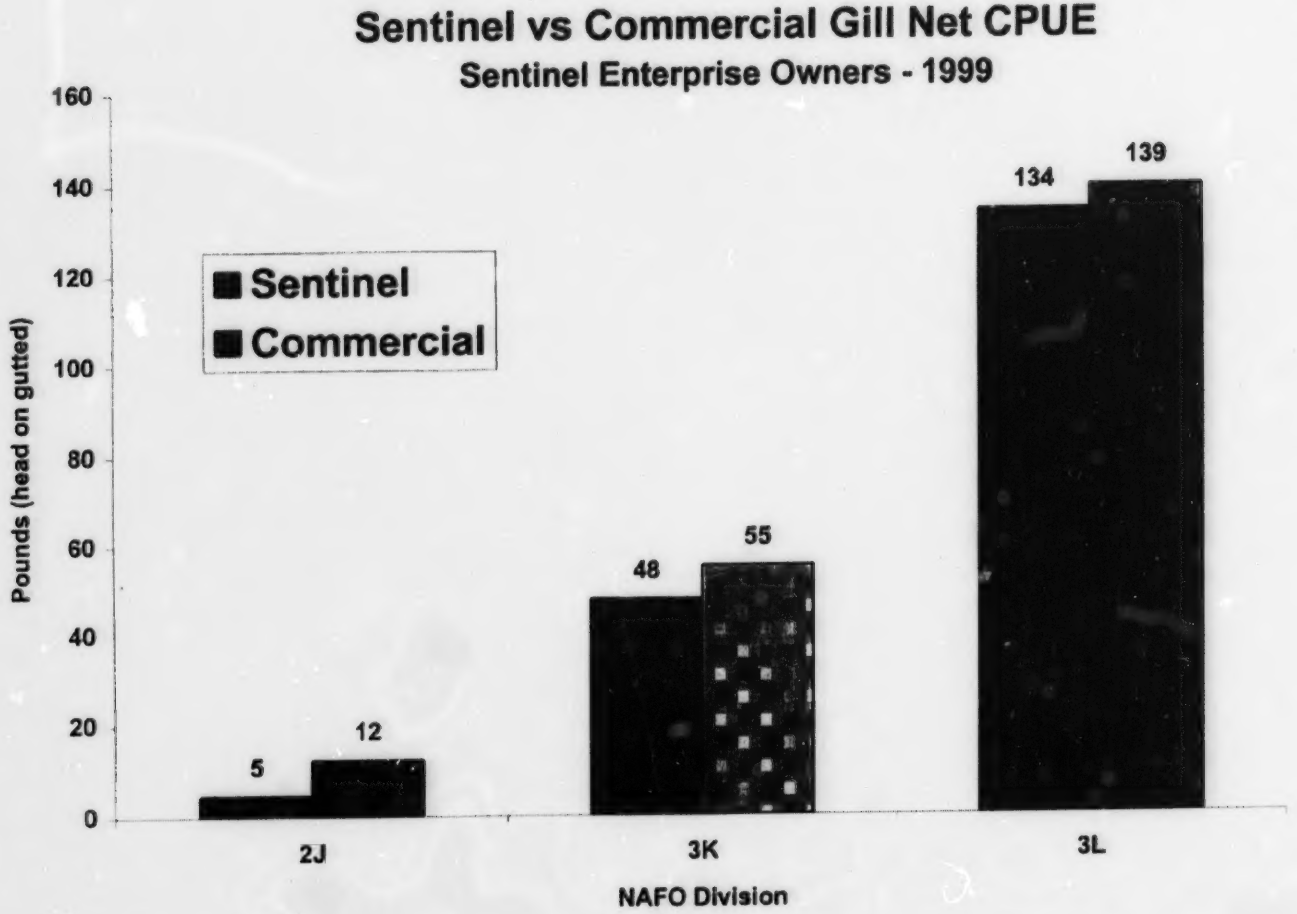
Sentinel vs Commercial Gill Net CPUE
Sentinel Enterprise Owners - 1999
Pounds (head on gutted)
160
140
120
100
80
60
40
20
0
Sentinel
Commercial
5
12
48
55
134
139
2J
3K
3L
NAFO Division

Figure 8